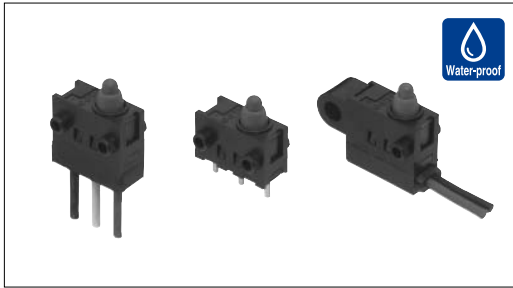


Detector Switch Water-proof Type

SPVQ3 Series



Long travel type applicable to operation without an actuator.



Typical Specifications

Items		Specifications	
Rating(max.)(min.) (Resistive load)		0.1A 12V DC/50 μ A 5V DC	0.1A 12V DC/1mA 5V DC
Voltage drop (Initial/After operating life)		0.2V max./0.3V max.	
Operating force		Push type	Actuator type
		1 \pm 0.5N	3N max.
Operating life		Normal type	Long life type
	Without load	300,000cycles	1,200,000cycles
	With load	300,000cycles (0.1A 12V DC)	1,200,000cycles (0.1A 12V DC)

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Product Line

Operating life	Poles	Positions	Changeover timing	Operating mode	Terminal type	Main body form	Minimum order unit(pcs)	Product No.	Drawing No.
300,000 cycles	1	2	Non shorting	Push	For PC board	Normal	5,200	SPVQ380400	1
						Boss - right side		SPVQ380300	
						Boss - left side		SPVQ380201	
					Boss - both sides	SPVQ380100			
					Solder terminal	Boss - right side		SPVQ380700	2
						Boss - left side		SPVQ380600	
		Boss - both sides		SPVQ380500					
		Right angle		Boss - right side	SPVQ380900	3			
		Left angle		Boss - left side	SPVQ380800	4			
		With wire (Downwards)		With a screw hole	Boss - right side	SPVQ361000※	5		
					Boss - left side	SPVQ361100※			
					Boss - both sides	SPVQ361200※	6		
	With a screw hole		Boss - right side	SPVQ361300※					
			Boss - left side	SPVQ361400※	7				
			Boss - both sides	SPVQ361500※	8				
	With wire (Right side)	Boss - right side	SPVQ361600※						
		Boss - left side	SPVQ361700※	9					
		Boss - both sides	SPVQ361800※						
	With wire (Left side)	Boss - right side	SPVQ361900※		9				
		Boss - left side	SPVQ362000※						
		Boss - both sides	SPVQ362000※						
	1	2	Non shorting	Actuator A	For PC board	Normal	5,200	SPVQ370400	1
						Boss - right side		SPVQ370300	
						Boss - left side		SPVQ370200	
Boss - both sides					SPVQ370100				
Solder terminal					Boss - right side	SPVQ370700		2	
					Boss - left side	SPVQ370600			
		Boss - both sides		SPVQ370500					
Right angle		Boss - right side		SPVQ370900	3				
Left angle		Boss - left side		SPVQ370800	4				
With wire (Downwards)		With a screw hole		Boss - right side	SPVQ350100※	5			
				Boss - left side	SPVQ350200※				
				Boss - both sides	SPVQ350300※	6			
	With a screw hole	Boss - right side	SPVQ350400※						
		Boss - left side	SPVQ350500※	7					
		Boss - both sides	SPVQ350600※	8					
With wire (Right side)	Boss - right side	SPVQ350700※							
	Boss - left side	SPVQ350800※	9						
	Boss - both sides	SPVQ350900※							
With wire (Left side)	Boss - right side	SPVQ351000※		9					
	Boss - left side	SPVQ351000※							
	Boss - both sides	SPVQ351100※							

- Detector**
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- TACT Switch™
- Custom-Products

Product Line

Operating life	Poles	Positions	Changeover timing	Operating mode	Terminal type	Main body form	Minimum order unit (pcs)	Product No.	Drawing No.	
300,000 cycles	1	2	Non shorting	Actuator B	For PC board	Normal	5,200	SPVQ371300	1	
						Boss - right side		SPVQ371200		
						Boss - left side		SPVQ371100		
						Boss - both sides		SPVQ371000		
					Solder terminal	Boss - right side		SPVQ371600	2	
						Boss - left side		SPVQ371500		
						Boss - both sides		SPVQ371400		
					Right angle	Boss - right side		SPVQ371800	3	
		Left angle		Boss - left side	SPVQ371700	4				
		1		With wire (Downwards)	With a screw hole	1,600	SPVQ351200※	6		
					Boss - right side		SPVQ351300※			
					Boss - left side		SPVQ351400※			
					Boss - both sides		SPVQ351500※			
				With wire (Right side)	With a screw hole		SPVQ351600※	7		
					Boss - right side		SPVQ351700※			
					Boss - left side		SPVQ351800※			
Boss - both sides	SPVQ351900※									
With wire (Left side)	Boss - right side	SPVQ352000※	8							
	Boss - left side	SPVQ352100※								
	Boss - both sides	SPVQ352200※								
					9					
1,200,000 cycles	1	2	Non shorting	Push	For PC board	Normal	5,200	SPVQ340400	1	
						Boss - right side		SPVQ340300		
						Boss - left side		SPVQ340200		
						Boss - both sides		SPVQ340100		
					Solder terminal	Boss - right side		SPVQ340700	2	
						Boss - left side		SPVQ340600		
						Boss - both sides		SPVQ340500		
					Right angle	Boss - right side		SPVQ340900	3	
					Left angle	Boss - left side		SPVQ340800	4	
					With wire (Downwards)	With a screw hole		1,600	SPVQ320100※	5
						Boss - right side			SPVQ320200※	
						Boss - left side			SPVQ320300※	
		Boss - both sides		SPVQ320400※						
		With wire (Right side)		With a screw hole	SPVQ320500※	7				
				Boss - right side	SPVQ320600※					
				Boss - left side	SPVQ320700※					
				Boss - both sides	SPVQ320800※					
		With wire (Left side)		Boss - right side	SPVQ320900※	8				
				Boss - left side	SPVQ321000※					
				Boss - both sides	SPVQ321100※					
									9	
		2		Push	For PC board	Normal	5,200	SPVQ330400	1	
						Boss - right side		SPVQ330300		
						Boss - left side		SPVQ330200		
						Boss - both sides		SPVQ330100		
					Solder terminal	Boss - right side		SPVQ330700	2	
						Boss - left side		SPVQ330600		
						Boss - both sides		SPVQ330500		
					Right angle	Boss - right side		SPVQ330900	3	
					Left angle	Boss - left side		SPVQ330800	4	
					With wire (Downwards)	With a screw hole		1,600	SPVQ310100※	5
						Boss - right side			SPVQ310200※	
						Boss - left side			SPVQ310300※	
		Boss - both sides		SPVQ310400※						
		With wire (Right side)		With a screw hole	SPVQ310500※	7				
				Boss - right side	SPVQ310600※					
Boss - left side	SPVQ310700※									
Boss - both sides	SPVQ310800※									
With wire (Left side)	Boss - right side	SPVQ310900※	8							
	Boss - left side	SPVQ311000※								
	Boss - both sides	SPVQ311100※								
					9					

Product Line

Operating life	Poles	Positions	Changeover timing	Operating mode	Terminal type	Main body form	Minimum order unit (pcs)	Product No.	Drawing No.		
1,200,000 cycles	1	2	Non shorting	Actuator B	For PC board	Normal	5,200	SPVQ331300	1		
						Boss - right side		SPVQ331200			
						Boss - left side		SPVQ331100			
					Solder terminal	Boss - both sides		SPVQ331000			
						Boss - right side		SPVQ331600			
						Boss - left side		SPVQ331500			
					Right angle	Boss - both sides		SPVQ331400			
						Boss - right side		SPVQ331800			
					Left angle	Boss - left side		SPVQ331700			
		1			1	With wire (Downwards)	With a screw hole	1,600	SPVQ311200※	5	
							Boss - right side		SPVQ311300※		
							Boss - left side		SPVQ311400※		
						Boss - both sides	SPVQ311500※				
							With wire (Right side)		With a screw hole	SPVQ311600※	7
									Boss - right side	SPVQ311700※	
						Boss - left side			SPVQ311800※		
						Boss - both sides	SPVQ311900※				
							With wire (Left side)		Boss - right side	SPVQ312000※	8
Boss - left side	SPVQ312100※										
Boss - both sides	SPVQ312200※										

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

TACT Switch™

Custom-Products

Note

- 1.This unit cannot be used in water.
- 2.※Unless specified, the length of the lead wire is 250mm. Color is either red, black or yellow. For length modification, please consult us.
- 3.※Unless circuit is specified, wired (downward)types will apply three wires.
- 4.※Please specify circuits(N.O. or N.C.)for wired (side)types. Unless specified, the circuit will apply N.O.
- 5.Please place purchase orders per minimum order unit(integer).

Dimensions

Unit:mm

No.	Style
1	<p>Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Free position Operating force measurement position Total travel position PC board mounting face Terminal No.① Terminal No.② Terminal No.③</p> <p>Refer to page 71 "Actuator Configurations" for operating part shape. Refer to page 72 "Unit Configurations" for boss positions.</p>
2	<p>Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Free position Operating force measurement position Total travel position Terminal No.① Terminal No.② Terminal No.③</p> <p>Refer to page 71 "Actuator Configurations" for operating part shape. Refer to page 72 "Unit Configurations" for boss positions.</p>

Dimensions

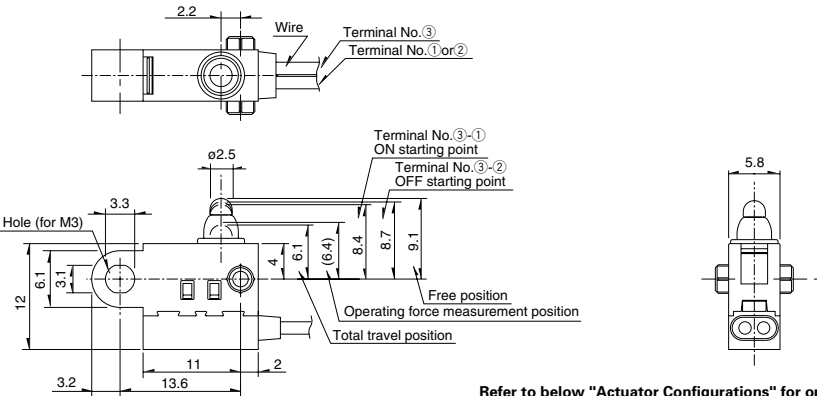
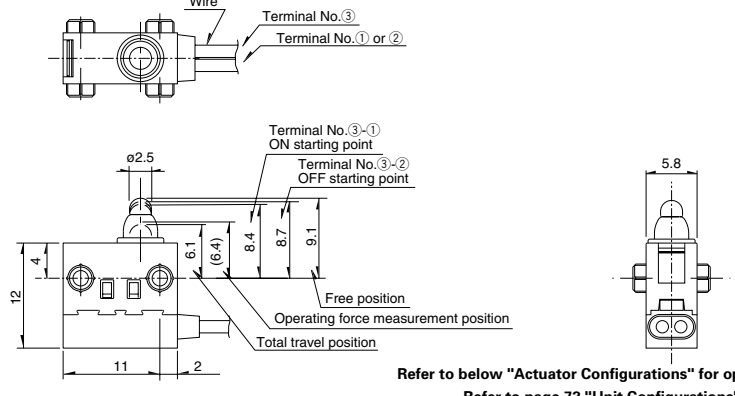
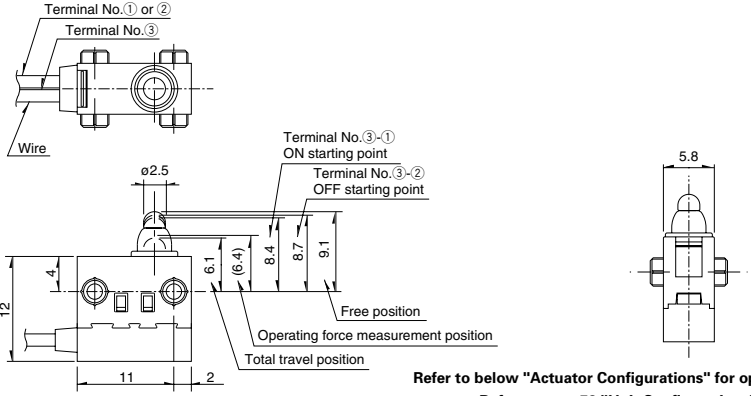
Unit:mm

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line
Package Type
- TACT Switch™
- Custom-
Products

No.	Style
3	<p>Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Terminal No.③ Terminal No.② Terminal No.① Free position Operating force measurement position Total travel position PC board mounting face</p> <p style="text-align: right;">Refer to page 71 "Actuator Configurations" for operating part shape.</p>
4	<p>Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Terminal No.③ Terminal No.② Terminal No.① Free position Operating force measurement position Total travel position PC board mounting face</p> <p style="text-align: right;">Refer to page 71 "Actuator Configurations" for operating part shape.</p>
5	<p>Hole (for M3) Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Terminal No.③ Terminal No.② Terminal No.① Free position Operating force measurement position Total travel position Wire</p> <p style="text-align: right;">Refer to page 71 "Actuator Configurations" for operating part shape.</p>
6	<p>Terminal No.③-① ON starting point Terminal No.③-② OFF starting point Terminal No.③ Terminal No.② Terminal No.① Free position Operating force measurement position Total travel position Wire</p> <p style="text-align: right;">Refer to page 71 "Actuator Configurations" for operating part shape. Refer to page 72 "Unit Configurations" for boss positions.</p>

Dimensions

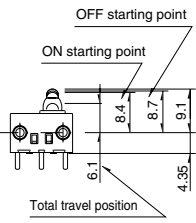
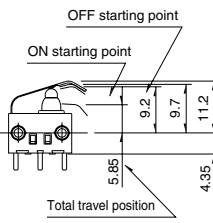
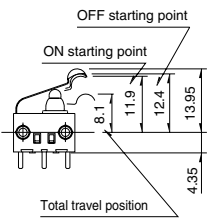
Unit:mm

No.	Style
7	 <p>Refer to below "Actuator Configurations" for operating part shape.</p>
8	 <p>Refer to below "Actuator Configurations" for operating part shape. Refer to page 72 "Unit Configurations" for boss positions.</p>
9	 <p>Refer to below "Actuator Configurations" for operating part shape. Refer to page 72 "Unit Configurations" for boss positions.</p>

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- TACT Switch™
- Custom-Products

Actuator Configurations

Unit:mm

Push	Actuator A	Actuator B
		

Detector

Push

Slide

Rotary

Encoders

Power

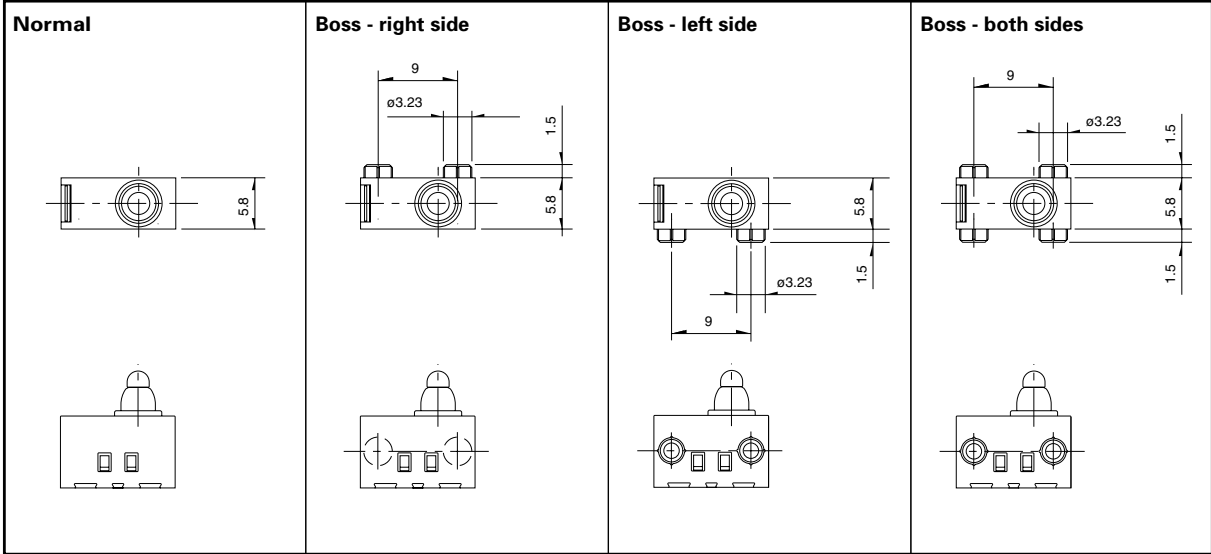
Dual-in-line
Package Type

TACT Switch™

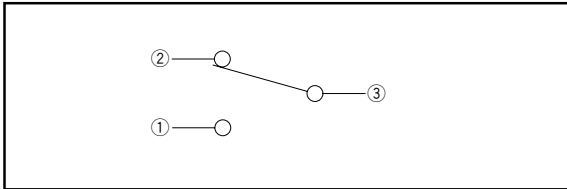
Custom-
Products

Unit Configurations



















Unit:mm



Circuit Diagram



List of Varieties (General-purpose Type / Water-proof Type / Telephone-hook Type)

Series	General-purpose Type		Water-proof Type					Telephone-hook Type	
	SSCW	SPVQ5	SPVQ1	SPVQ3	SPVQ4	SPVQ6	SSCN	SPPY5	
Photo									
Operation type			 	 					
Operating temperature range	-40 to +85							-10 to +60	
Rating(max.) (Resistive load)	0.1A 20V DC	0.1A 12V DC					0.1mA 3V DC min. 50mA 48V DC max.		
Rating(min.) (Resistive load)	100μA 3V DC	50μA 3V DC	50μA 3V DC or 1mA 5V DC	50μA 3V DC	50μA 5V DC	100μA 3V DC	0.1mA 3V DC		
Electrical performance	Initial contact resistance	500m max.						100m max.	
	Insulation resistance	100M min. 250V DC	100M min. 500V DC						
	Voltage proof	250V AC for 1 minute	500V AC for 1 minute						
Mechanical performance	Terminal strength	3N for 1 minute					5N for 1 minute		
	Actuator strength	20N					10N	5N	
Durability	Operating life without Load	100,000cycles 1 max.	300,000cycles 1 max.	300,000cycles or 1,200,000cycles 1 max.	300,000cycles 1 max.	100,000cycles 1 max.	300,000cycles 1 max.		
	Operating life with Load	(0.1mA 12V DC) 100,000cycles 1 max.	(0.1A 12V DC) 300,000cycles 1 max.	(0.1A 12V DC) 300,000cycles or 1,200,000 1 max.	(0.1A 12V DC) 300,000cycles 1 max.	(0.1A 12V DC) 100,000cycles 1 max.	(1mA 3V DC) 300,000cycles 1 max. or (50mA 60V DC) 100,000cycles 1 max.		
Environmental performance	Cold	-40 ± 2 for 500h						-20 ± 2 for 96h	
	Dry heat	85 ± 2 for 500h						85 ± 2 for 96h	
	Damp heat	60 ± 2 , 90 to 95%RH for 500h						40 ± 2 , 90 to 95%RH for 96h	
Dimensions (mm)	W	13.1	13.8	13.3	13	14.7	13.3	13	14.4
	D	11.35		5.8		5.4	5.3	25	28.6
	H	5.3	5.8	8	8.35	7.6	7	5	7.15
Soldering	Manual soldering	300 ± 10 , 3 ⁺ s						350 ± 5 , 3s max.	
	Dip soldering	260 ± 5 , 5 ± 1s							
	Reflow soldering							Please see P.79	
Number of poles	1							2	
Operation force	1N max.	2N max.	2N max. 5.9N max.	1 ± 0.5N	1 ± 0.3N	1 ± 0.5N	2N max.	0.8N max.	
Page	61	62	63	67	73	74	76	77	

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